

ABSTRACT

LOCALIZED POLE TIP HEATING DEVICE FOR MAGNETIC HEAD FOR HARD DISK DRIVE

The magnetic head is formed with a narrow pole tip, and a pole tip heating
5 element is fabricated to reduce the pole tip stress and increase its permeability, such that
the magnetization switching speed of the pole tip is increased. The heating element is
preferably electrically interconnected within the induction coil circuit of the magnetic
head, such that the electrical current flowing through the induction coil also flows
through the heating element. In a preferred embodiment, the heating element is
10 fabricated above the second magnetic pole. The heating element is preferably formed
with a resistance of approximately .2 to 1.0 ohms, such that the approximately 40 mA
current that flows through the induction coil and the heating element creates a heating
energy of the heating element of approximately .3 to 1.6 mW. The heating element can
be comprised of a variety of materials such as Cu, W, NiFe, NiCr and IrRh.